

## Appendix F -- Educational Handouts for Parents and Providers

- \* Infant/Toddler Growth and Development Overview for Child Care Providers
- \* CDC Growth Charts for Boys
- \* CDC Growth Charts for Girls
- \* A Nurturing Environment for the Infant Child Care Facility
- \* Playground Maintenance Checklist
- \* Creating Safe Outdoor Environments for Infants and Toddlers



# Infant/Toddler Growth and Development Overview for Child Care Providers

## Typical Growth and Development Birth to Three

The following information can guide you in helping providers understand typical growth and development of infants and toddlers. For experienced caregivers, this will be a review. For those staff who are new to providing care to this age group, though, it can provide a foundation for them to understand the needs of the children in their care.

Children develop at different rates, even in the same family. These differences all may be within the range of normal. It is important that the child care provider be familiar with normal growth and development and that the CCHC discuss the children's growth and development with the caregiver at each visit. The CDC web site provides up-to-date free charts, that can be down-loaded to a printer. Many libraries in Washington provide free internet access. These charts allow parents to chart their babies growth.

## Definitions

For beginning infant caregivers, some definitions can be helpful.

Growth refers to the body getting larger in size.

Development refers to the body becoming more skilled or mature.

## Growth

The two main factors that affect children's growth (height and weight) are their parents and their living conditions. Children inherit their growth characteristics. In terms of living conditions, nutrition is the most important factor affecting their growth.

## Height and Weight Growth in Infancy (Birth – One year)

Infants, like adults, vary in size and shape. Although they can vary a lot in their growth and still be healthy, watching growth is a way for you to see if they are getting good nutrition (enough of the right food to eat). The following heights and weights are general guides (averages).

1. The average weight at birth varies from 6–9 pounds.
2. The average length at birth varies from 18–22 inches.
3. Infants gain 4-5 ounces a week (1–1½ pounds a month) from birth to six months, doubling their birth weight by 5 months (For example: 7 pounds at birth = 14 pounds at five months).
4. They gain 3–4 ounces a week from six months to one year, tripling their birth weight at one year (For example: 7 pounds at birth = 21 pounds at one year).
5. By their first birthday, infants have increased their birth length by one half. An infant 20 inches at birth will be about 30 inches at one year.

	<b>BIRTH</b>	<b>5 MONTHS</b>	<b>1 YEAR</b>	<b>2 YEARS</b>	<b>3-5 YEARS</b>
Average Wt.	7 lbs.	double birth weight	triple birth weight	gain of 5–6 lbs./yr.	gain of 4–5 lbs./yr.
Average Ht.	20"		add 1½ birth height	about ½ adult height	

### Height and Weight Growth from Birth through Five Years

Growth slows down by the end of the first year. Preschool years are a time of slow, but steady growth for children. During their second year (from 1–3) children gain about 5–6 pounds. From 3–5 years they gain about 4–5 pounds a year. Generally children’s height at 2 years will be one half of their adult height. See the following growth chart.

### Development

Development occurs in the following areas:

1. **Motor skills** – How well a child moves all the muscles in the body, how muscles work, and how the nervous system tells the muscles what to do.
2. **Language skills** – How a child speaks, hears and understands.
3. **Social and emotional skills** – How a child learns to see himself/herself as a loved, loving, able, unique human being. Also, how a child knows what is expected and how to act in his/her culture or society.
4. **Sexuality** – A sense of a sexual self that develops from birth on. Sexual development is influenced by physical, emotional, and intellectual growth as well as by social and cultural expectations.
5. **Early Brain Development** (thinking and intellectual) skills – How a child thinks and learns.

### Motor Development

Motor skills and control increase as the infant grows and as they are provided the opportunities to develop muscle strength and control. Placing them in a variety of positions is important. Infants birth to 3 months move their extremities very well, but their movements are not well coordinated. Infants in this age range also can lift their heads when placed on their stomachs and will follow objects with their eyes from side to side when on their backs.

From 3–6 months infants gain more control of their extremities and can roll over and reach for objects. By 5–6 months they can find their mouths with their hands.

At 6–9 months infants can sit alone, can pull themselves to standing, can possibly crawl, can reach out and can grab objects, and can play peek-a-boo. They may begin self-feeding, although the floor may get more than the infant.

By one year of age infants creep, crawl, pull themselves up, use thumb and forefinger in a pincer grasp, hold a cup, and have good hand-eye coordination.

### Language Skills Development

From birth to three months infants can coo and can make other noises besides crying. They can hear well and like the human voice.

At 3–6 months they may begin babbling and will turn their eyes in the direction of the sound.

From 6–9 months infants may say “dada” and “mama” but probably do not connect these sounds with particular humans. Infants begin to imitate speech and like musical sounds and squeaky toys. By a year infants will use “mama” and “dada” for specific people in their lives and may understand one or two simple commands. They begin to understand “no, no.”

### Social and Emotional Skills Development

Infants are social beings from birth. Things that bring them comfort are being held and cuddled and sucking. They cry to let someone know their needs. If their cries are responded to, trust begins to develop during the first three months.

At 3–6 months, they begin to smile, make eye contact, and show signs of attachment. They also begin to react differently to different people in their environment.

At 6–9 months, typical infants get shy or uneasy with strangers. They begin to show strong attachment and enjoy games such as “pat-a-cake,” etc.

By one year, infants are very responsive to adults’ smiles, recognize themselves in a mirror, and begin to be interested in activities of others.

## Normal Sexual Development

Sexual development, especially in young children, is an area that is often overlooked. Some of the behaviors children may exhibit related to their sexual development can be of great concern to providers and families. The following explanations about sexual development and guidelines to help this important aspect of development can be offered by the consultant.

Children begin to develop their sense of their sexual self at birth. Sexual development is influenced by physical, emotional, and intellectual growth and by social and cultural expectations. It is important to understand that children need to be supported as they exhibit normal sexual behaviors.

Responding to children's sexual behaviors can be difficult. Providers' own values and belief systems will greatly influence their responses. It is important for providers to have an understanding with families about how they will handle children's sexual behaviors. Developing sexuality guidelines and sharing those with families and staff can help the caregiver in supporting this important aspect of child development. The child care program should commit to:

1. Providing unbiased and accurate information to children that promotes respect of self and others, including others' values and beliefs;
2. Acknowledging that it is normal for children, even infants, to touch all parts of their bodies;
3. Using correct words for body parts and functions.

## Early Brain Development

In recent years, there has been increased attention to understanding the development of the brain. Research confirms what many who work with young children have known of the importance of loving and secure relationships and age-appropriate stimulation in fostering children's physical, psychological, and cognitive development. New technologies have allowed neuroscientists to measure and map the growth of the human brain, leading to new insights about promoting optimal development.

The following highlights of early brain development research might be a place to start when sharing this information with providers.

- Brain imaging technologies have revealed that the human brain is not fully developed at birth, but rather, is about 25% of its approximate weight at adulthood.
- At age three, a child's brain has reached about 90% of its full potential.
- After the age of three, the production of brain cells and nerve connections continues at a slower rate until the age of ten.
- After the age of ten, many of the connections that have been activated and used remain, while those that have not been used tend to disappear.

Thus, the quality of a child's earliest experiences has a critical impact on brain development.

## Windows of Opportunity

The human brain has a remarkable capacity to change, but timing is critical. Research tells us there are optimum periods of development ("windows of opportunity") for each function in a child's brain. (See chart on next page.) If the brain misses the opportunity to develop the basic circuitry for a function (for example language), it may permanently lose the capability for that function. When caregivers understand the critical periods of development in the brain, they can help development by providing the right stimulation at the right time. There are optimal periods of opportunity, also called "prime times," during which the brain is particularly efficient at specific types of learning.

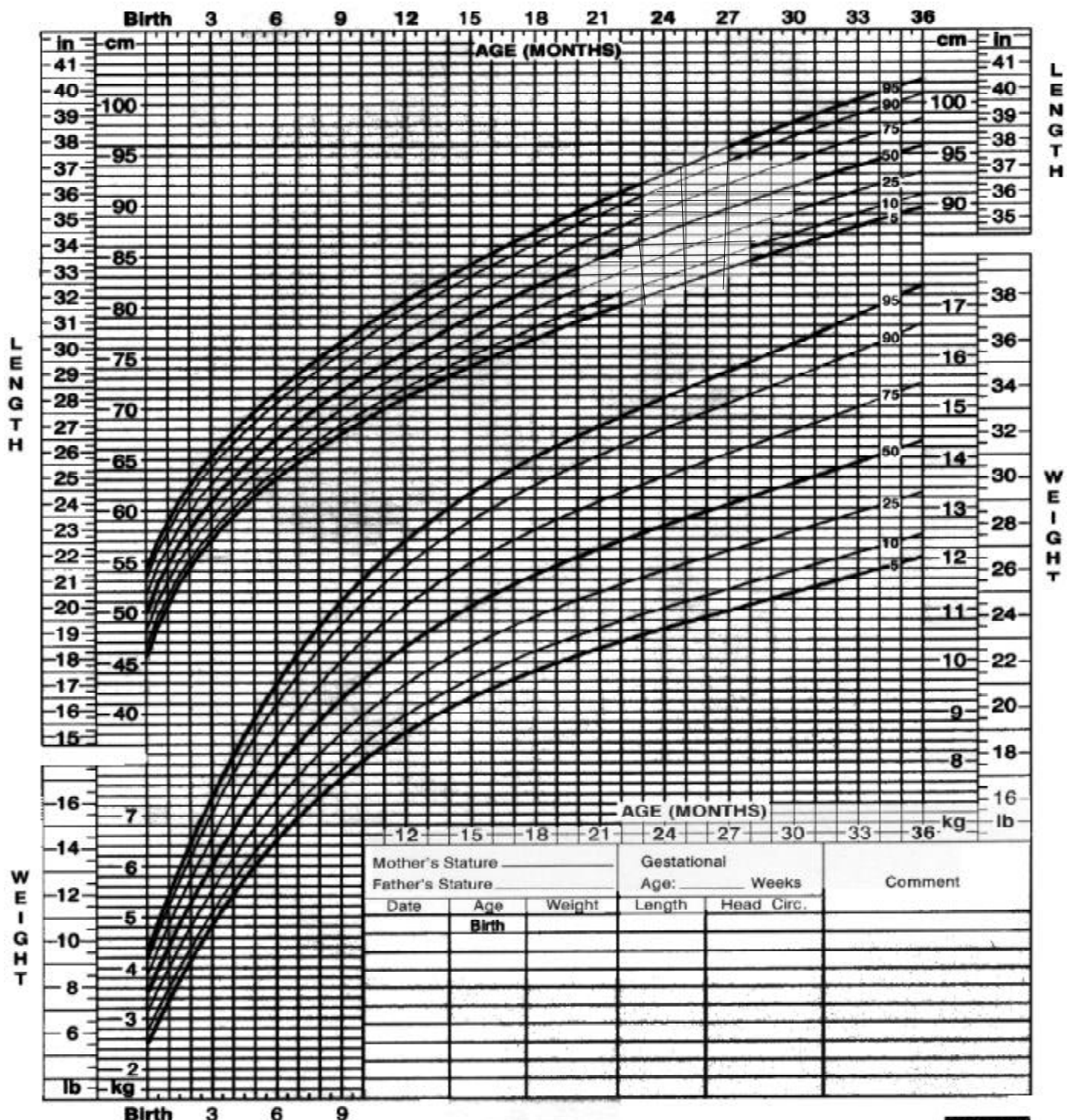
There also are times when negative experiences or the absence of appropriate stimulation are more likely to have serious and sustain effects. Therefore, well-designed, developmentally appropriate settings can improve the prospects and the quality of life for many children by helping children take advantage of the windows of opportunity or by preventing negative experiences during prime times of development.

## Infant/Toddler Growth and Development Overview for Child Care Providers

Optimal Periods of Development							
Prenatal	Birth	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years
motor development							
	emotional control						
	vision development						
	social attachment						
	vocabulary						
	second language						
		math / logic					
			music				

## CDC Growth Chart for Boys

### Length-for-age and Weight-for-age percentiles



**SOURCE:** Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000). <http://www.cdc.gov/growthcharts>



**CDC Growth Chart for Boys** - This Chart is from November 2000- You can print most current Chart at [www.cdc.gov/growthcharts](http://www.cdc.gov/growthcharts)



# A Nurturing Environment for the Infant Child Care Facility

Rochelle Bunnett, M.Ed., a former teacher and now a design consultant (see also Our Kids Press in Resources and References section), offers the following examples and ideas for nurturing indoor environments.

1. A well-designed environment for infants must be flexible and responsive to the varying needs, interests, and passions of the people in the space. Reexamine what you have been told about room arrangements and experiment with a variety of different floor plans, first on paper, before committing to a plan. Here are some examples:
  - Provide a variety of seating arrangements from benches to stools to chairs of different heights.
  - Put wheels (locking) on all the furniture so they can be moved around easily.
  - Adapt water and sand tables with different types of lids (i.e., peak-a-boo, clear Plexiglas) and use the tables for both sensory play and mealtimes.
2. If you ask many teachers what they want more of in their environment they will say more space. Most programs meet only the minimum requirements for square footage and can feel crowded with too much furniture. Fixed features, such as doors, windows, and electrical outlets, play a major role in the room's design. Before buying any additional materials or furniture, encourage programs to take a complete inventory of what they have. They also might explore attractive and functional ways to store, display, and present the materials they have. For example:
  - Add storage shelves under water/sand tables.
  - Install rain gutters on the walls to display books and puzzles.
  - Add interactive plan panels such as peek-a-boo.
3. Young children often need more than one "cozy nest." Programs have used mattresses, pillows, and other materials to create soft and quiet places that still are in visual range of caregivers.
4. Flexible lighting is especially important in infant settings. Instead of having banks of fluorescent lights on, some programs have specific areas "spotlighted" or warmed by lamps (table, floor, and clip-on). The amount of lighting might be able to be adjusted by turning on sections of overhead lights or installing dimmer switches to change the brightness.
5. Some toddlers need more time to play and complete projects, so programs can reconsider the need to have everything "cleaned up" during clean up time. In some centers, the block area looks more like a construction site in progress with unfinished projects preserved by signs stating "Construction in Process."
6. Sleeping environments.

Providing nurturing environments is more complex than following a list of guidelines or a master design for infant/toddler rooms. Program staff need to explore their own beliefs and value systems, draw from their childhood memories, and do some research. The following references are a place to start:

Greenman, Jim. *Caring Spaces, Learning Places: Children's Environments That Work*. Redmond, WA: Exchange Press Inc., 1988.

Greenman, Jim. "Infants Get Out: Outdoor Settings for Infant Toddler Play," *Child Care Exchange*, May/June 1991.

Szanton, Eleanor. *Creating Child-Centered Programs for Infants and Toddlers*. Washington, D.C.: Children's Resources International, Inc., 1997.

NAEYC *Young Children* articles:

May 1998 – "Simply Sensational Spaces: A Multi-Approach to Toddler Environments," Linda Howard & Linda Ruhmann.

March 1997 – "Toddlers at Play: Environments at Work," Carol Zeavin.

May 1996 – "Lighting Alternatives: Considerations for Child Care Centers," Mary Ellis Schreiber.

## PLAYGROUND MAINTENANCE CHECKLIST

### General Up-Keep

- ☐ Area is free of miscellaneous debris, litter, or animal excrement.
- ☐ Trash or garbage is not accessible to children.
- ☐ Equipment is not broken or missing pieces.

### Surfacing

- ☐ Equipment has 9" - 12" of protective surfacing under and around it and surfacing materials have not deteriorated.
- ☐ Foreign objects or debris are removed from loose surfacing materials.
- ☐ Loose surfacing materials have not compacted or reduced in depth, with special attention to heavy use areas such as those under swings and slide exit regions.
- ☐ Surfacing extends at least 6 feet from the base of the equipment in all directions.



### General Hazards

- ☐ There are no sharp points, corners, and edges. For example, check the sides and sliding surface of slide chutes for sharp or rough edges caused by deterioration.
- ☐ There are no protrusions and projections, like nuts, bolts, or bar ends.
- ☐ There are no missing or damaged protective caps or plugs.
- ☐ There are no potential clothing entanglement hazards such as open S-hooks or gaps at the top of slides.
- ☐ There are no pinch, crush, and shearing points or exposed moving parts.
- ☐ Check for trip hazards, such as exposed footings on anchoring devices and rocks, roots, or any other environmental obstacles in the play area.

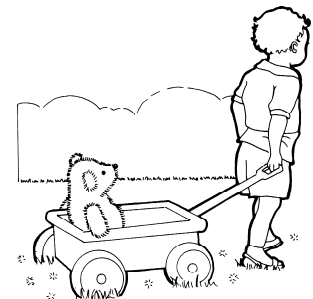


### Deterioration of Equipment

- ☐ Equipment and other playground features have no rust, rot, cracks, or splinters, with special attention to possible corrosion where structures come in contact with the ground.
- ☐ Equipment is securely anchored.

### Security of Hardware

- ☐ There are no loose or worn connecting, covering, or fastening hardware devices. For example, S-hooks at both ends of suspending elements of swings and all connection points on flexible climbing devices for wear.
- ☐ Moving parts such as swing bearing hangers are not worn.



### Equipment Use Zones

- ☐ Equipment use zones are free of obstacles.

### Drainage Systems

- ☐ The entire play area has no drainage problems, with special attention to heavy use areas, such as those under swings and slide exit regions.

# Creating Safe Outdoor Environments for Infants and Toddlers

by Mischa Trusty, Environmental Health Specialist, Snohomish County Health District

## Background Information

Outdoor playground activities provide children with time for gross motor development and a wide variety of sensory, social, and imaginative play opportunities. Children develop their balance and coordination. Outdoor time for all children, including infants and toddlers, is important. It benefits a child's mood, energy level, and sleep. Fresh air is healthy, and the outdoors allows children the opportunity to experience nature.

Unfortunately there are no specific design criteria for playgrounds used by children under 2 years old. For this reason, play areas for infants and young toddlers pose a particular challenge. It is crucial to remember that nothing can replace the need for continuous supervision. When a center cares for a wide age range of children, it is best to have separate play areas for younger and older children. If separate areas are not possible, then a distinct separation between equipment for younger children and that for older children would suffice.

## Overall Safety

A playground should be free of sharp edges, protrusions (especially those at a child's eye level), and broken equipment. Playground equipment should not be able to pinch or crush a child's fingers. Footings securing equipment to the ground should not be exposed as this can create a tripping hazard or cause serious injury if a child should fall onto it. The fence around a play area should be well-maintained and not easily climbable. The grounds should be free of debris, glass, standing water, or other foreign objects and should be checked for these things daily. Make sure that plants are not poisonous and that dirt doesn't contain toxic substances such as lead or arsenic. Make the natural environment a fun and safe place for children to explore.

The summer sun in many areas can be very hot. A shaded area is necessary to protect young children from overheating. A picnic table in a shaded area would provide a good area for quiet play. Young infants should be kept out of the direct sunlight. Sunscreen should be applied to children over 6 months old. Visors, hats, and sunglasses are useful in protecting children from the sun's damaging rays. In warmer months, it is also important to have drinking water available outside.

## Surfacing

According to the Consumer Product Safety Commission, nearly 70% of all playground injuries are caused by falls to the surface. For this reason, having appropriate, well-maintained surface material beneath any climbing equipment is important. This includes slides, swings, and other gross motor equipment. Appropriate surfacing may consist of loose-fill material such as woodchips or pea gravel at a depth of 9 to 12 inches. Be wary that young children may put pea gravel in their nose or ears. An alternative option to loose-fill material would be a unitary mat which meets ASTM standards for fall protection; these mats are often made of rubber. Concrete, asphalt, dirt, and grass are not adequate to protect against serious head and neck injuries. Fall protection surfacing needs to extend a minimum of six feet in all directions around a piece of equipment. More than six feet is needed for swings and slides. Loose fill surfacing material should be raked often to help minimize compaction.

## Age-Appropriate Equipment

A play area should be designed with the age of the child in mind. Equipment that is appropriate for a five year old is most likely not suitable for an 18 month old child.

## Creating Safe Outdoor Environments for Infants and Toddlers, continued

protected from foreign debris. Bucket or surround swings for infants and toddlers provide back support.

For older infants and young toddlers, a crawling tunnel can provide an opportunity for exploration. Avoid sharp or rough edges and ensure adequate supervision and adult accessibility in case of emergencies. A low climbing platform is another option. In general, for this age group, stationary equipment is better than equipment with moving parts.

Loose play parts are excellent choices for infants and toddlers. Push toys, wagons, or other pull toys, and balls can be brought outside for playtime. Make sure any cords on the pull toys are short enough to prevent accidental strangling, usually about 6 inches.

For older toddlers, any playground equipment should have a maximum height of 24 inches. A recommended size for the deck space on a climber is 4 ft. x 4 ft. Any climbing equipment needs to offer an easy way out as toddlers can climb better than they can descend. Low ramps work well for this age group. Handrails on such equipment should be approximately 22 to 26 inches high, rather than the 38 inch handrail height typically used for school-age children's equipment. If a surface is elevated more than 20 inches a guardrail or protective barrier at least 29" high should be installed. Barriers should be free from entrapment hazards (see below). A steering wheel placed on the structure provides a fun activity for toddlers, or consider placing two next to each other for parallel play.

Toddlers may enjoy using a playhouse for creative or social play. It is advisable to choose an open design or take off the shutters to allow for good supervision from all sides.

Durable ride-on toys that have a wide base can be used by some toddlers. Toddler helmets can be purchased and made available. At this young age, the helmet serves a dual purpose. Not only does it protect the head from injury, but it also teaches a practice that will hopefully stay with the children as they get older. It is vital that helmets not be worn when playing on other equipment due to the risk of entanglement.

The Consumer Product Safety Commission recommends that the following types of playground equipment not be used for children under age 5: chain or cable walks, free standing arch climbers, fulcrum, seesaws, log rolls, long spiral slides, overhead rings, parallel bars, swinging gates, track rides, and vertical sliding poles. Caution and strict supervision should be used for swings, merry-go-rounds, and other moving equipment.

### Entrapments and Entanglements

Entrapment and entanglement hazards on a playground can have deadly consequences. An entrapment is any space measuring more than 3.5 inches and less than 9 inches. In such an opening, a child can get their body through, but not their head. They become trapped and can strangle.

Protruding bolts and gaps where parts of equipment are joined together can catch clothing or drawstrings leading to strangulation. Providers should check children's clothing for drawstrings before allowing them on play equipment. S-hooks on swings should be closed shut (so a dime will not fit in the opening).

### Role of the Health Consultant

It takes a trained eye to evaluate the safety of an outdoor play area. A health consultant should become familiar with the major hazards that can be found on playgrounds. A good resource is the Consumer Product Safety Commission's "Handbook for Public Playground Safety."

Playground hazards can be assessed during a consultation visit and discussed with the director and staff. In reviewing playgrounds, a checklist is helpful. A basic checklist has been included in the appendix of this manual. A copy of the checklist and other playground safety information can be provided to the child care. The center can be encouraged to

---

## Creating Safe Outdoor Environments for Infants and Toddlers, continued

---

evaluate their own playground on a regular basis.

The nurse consultant can also advise the child care center on age-appropriate outdoor activities. Explaining the developmental stages of the children and the benefits of different types of play opportunities can be helpful to centers wishing to modify or enhance their outdoor play areas.

### **References and Resources to Keep Current**

American Public Health Association and American Academy of Pediatrics. *Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs*. Chapter 5.3, 1992.

Christiansen, Monty L., ed. *Points About Playgrounds: A Compilation of Significant Information*, second edition. Arlington VA: National Recreation and Park Association, 1995.

Miller, Karen. *Caring for the Little Ones: More Fun Outside*. *Child Care Information Exchange*, p. 20-23. July 1999.

U.S. Consumer Product Safety Commission. *Handbook for Public Playground Safety*. Washington D.C., 1998.  
<[www.cpsc.gov](http://www.cpsc.gov)>

Wortham, Sue and Marshal R. Wortham. "Nurturing Infant and Toddler Play Outside: Three Cells of Possibility," *Dimensions of Early Childhood*, p. 25-26, Summer 1992.



## Appendix F -- Educational Handouts for Parents and Providers

- \* Infant/Toddler Growth and Development Overview for Child Care Providers
- \* CDC Growth Charts for Boys
- \* CDC Growth Charts for Girls
- \* A Nurturing Environment for the Infant Child Care Facility
- \* Playground Maintenance Checklist
- \* Creating Safe Outdoor Environments for Infants and Toddlers



# Infant/Toddler Growth and Development Overview for Child Care Providers

## Typical Growth and Development Birth to Three

The following information can guide you in helping providers understand typical growth and development of infants and toddlers. For experienced caregivers, this will be a review. For those staff who are new to providing care to this age group, though, it can provide a foundation for them to understand the needs of the children in their care.

Children develop at different rates, even in the same family. These differences all may be within the range of normal. It is important that the child care provider be familiar with normal growth and development and that the CCHC discuss the children's growth and development with the caregiver at each visit. The CDC web site provides up-to-date free charts, that can be down-loaded to a printer. Many libraries in Washington provide free internet access. These charts allow parents to chart their babies growth.

## Definitions

For beginning infant caregivers, some definitions can be helpful.

Growth refers to the body getting larger in size.

Development refers to the body becoming more skilled or mature.

## Growth

The two main factors that affect children's growth (height and weight) are their parents and their living conditions. Children inherit their growth characteristics. In terms of living conditions, nutrition is the most important factor affecting their growth.

## Height and Weight Growth in Infancy (Birth – One year)

Infants, like adults, vary in size and shape. Although they can vary a lot in their growth and still be healthy, watching growth is a way for you to see if they are getting good nutrition (enough of the right food to eat). The following heights and weights are general guides (averages).

1. The average weight at birth varies from 6–9 pounds.
2. The average length at birth varies from 18–22 inches.
3. Infants gain 4-5 ounces a week (1–1½ pounds a month) from birth to six months, doubling their birth weight by 5 months (For example: 7 pounds at birth = 14 pounds at five months).
4. They gain 3–4 ounces a week from six months to one year, tripling their birth weight at one year (For example: 7 pounds at birth = 21 pounds at one year).
5. By their first birthday, infants have increased their birth length by one half. An infant 20 inches at birth will be about 30 inches at one year.

	<b>BIRTH</b>	<b>5 MONTHS</b>	<b>1 YEAR</b>	<b>2 YEARS</b>	<b>3-5 YEARS</b>
Average Wt.	7 lbs.	double birth weight	triple birth weight	gain of 5–6 lbs./yr.	gain of 4–5 lbs./yr.
Average Ht.	20"		add 1½ birth height	about ½ adult height	

### Height and Weight Growth from Birth through Five Years

Growth slows down by the end of the first year. Preschool years are a time of slow, but steady growth for children. During their second year (from 1–3) children gain about 5–6 pounds. From 3–5 years they gain about 4–5 pounds a year. Generally children’s height at 2 years will be one half of their adult height. See the following growth chart.

### Development

Development occurs in the following areas:

1. **Motor skills** – How well a child moves all the muscles in the body, how muscles work, and how the nervous system tells the muscles what to do.
2. **Language skills** – How a child speaks, hears and understands.
3. **Social and emotional skills** – How a child learns to see himself/herself as a loved, loving, able, unique human being. Also, how a child knows what is expected and how to act in his/her culture or society.
4. **Sexuality** – A sense of a sexual self that develops from birth on. Sexual development is influenced by physical, emotional, and intellectual growth as well as by social and cultural expectations.
5. **Early Brain Development** (thinking and intellectual) skills – How a child thinks and learns.

### Motor Development

Motor skills and control increase as the infant grows and as they are provided the opportunities to develop muscle strength and control. Placing them in a variety of positions is important. Infants birth to 3 months move their extremities very well, but their movements are not well coordinated. Infants in this age range also can lift their heads when placed on their stomachs and will follow objects with their eyes from side to side when on their backs.

From 3–6 months infants gain more control of their extremities and can roll over and reach for objects. By 5–6 months they can find their mouths with their hands.

At 6–9 months infants can sit alone, can pull themselves to standing, can possibly crawl, can reach out and can grab objects, and can play peek-a-boo. They may begin self-feeding, although the floor may get more than the infant.

By one year of age infants creep, crawl, pull themselves up, use thumb and forefinger in a pincer grasp, hold a cup, and have good hand-eye coordination.

### Language Skills Development

From birth to three months infants can coo and can make other noises besides crying. They can hear well and like the human voice.

At 3–6 months they may begin babbling and will turn their eyes in the direction of the sound.

From 6–9 months infants may say “dada” and “mama” but probably do not connect these sounds with particular humans. Infants begin to imitate speech and like musical sounds and squeaky toys. By a year infants will use “mama” and “dada” for specific people in their lives and may understand one or two simple commands. They begin to understand “no, no.”

### Social and Emotional Skills Development

Infants are social beings from birth. Things that bring them comfort are being held and cuddled and sucking. They cry to let someone know their needs. If their cries are responded to, trust begins to develop during the first three months.

At 3–6 months, they begin to smile, make eye contact, and show signs of attachment. They also begin to react differently to different people in their environment.

At 6–9 months, typical infants get shy or uneasy with strangers. They begin to show strong attachment and enjoy games such as “pat-a-cake,” etc.

By one year, infants are very responsive to adults’ smiles, recognize themselves in a mirror, and begin to be interested in activities of others.

## Normal Sexual Development

Sexual development, especially in young children, is an area that is often overlooked. Some of the behaviors children may exhibit related to their sexual development can be of great concern to providers and families. The following explanations about sexual development and guidelines to help this important aspect of development can be offered by the consultant.

Children begin to develop their sense of their sexual self at birth. Sexual development is influenced by physical, emotional, and intellectual growth and by social and cultural expectations. It is important to understand that children need to be supported as they exhibit normal sexual behaviors.

Responding to children's sexual behaviors can be difficult. Providers' own values and belief systems will greatly influence their responses. It is important for providers to have an understanding with families about how they will handle children's sexual behaviors. Developing sexuality guidelines and sharing those with families and staff can help the caregiver in supporting this important aspect of child development. The child care program should commit to:

1. Providing unbiased and accurate information to children that promotes respect of self and others, including others' values and beliefs;
2. Acknowledging that it is normal for children, even infants, to touch all parts of their bodies;
3. Using correct words for body parts and functions.

## Early Brain Development

In recent years, there has been increased attention to understanding the development of the brain. Research confirms what many who work with young children have known of the importance of loving and secure relationships and age-appropriate stimulation in fostering children's physical, psychological, and cognitive development. New technologies have allowed neuroscientists to measure and map the growth of the human brain, leading to new insights about promoting optimal development.

The following highlights of early brain development research might be a place to start when sharing this information with providers.

- Brain imaging technologies have revealed that the human brain is not fully developed at birth, but rather, is about 25% of its approximate weight at adulthood.
- At age three, a child's brain has reached about 90% of its full potential.
- After the age of three, the production of brain cells and nerve connections continues at a slower rate until the age of ten.
- After the age of ten, many of the connections that have been activated and used remain, while those that have not been used tend to disappear.

Thus, the quality of a child's earliest experiences has a critical impact on brain development.

## Windows of Opportunity

The human brain has a remarkable capacity to change, but timing is critical. Research tells us there are optimum periods of development ("windows of opportunity") for each function in a child's brain. (See chart on next page.) If the brain misses the opportunity to develop the basic circuitry for a function (for example language), it may permanently lose the capability for that function. When caregivers understand the critical periods of development in the brain, they can help development by providing the right stimulation at the right time. There are optimal periods of opportunity, also called "prime times," during which the brain is particularly efficient at specific types of learning.

There also are times when negative experiences or the absence of appropriate stimulation are more likely to have serious and sustain effects. Therefore, well-designed, developmentally appropriate settings can improve the prospects and the quality of life for many children by helping children take advantage of the windows of opportunity or by preventing negative experiences during prime times of development.

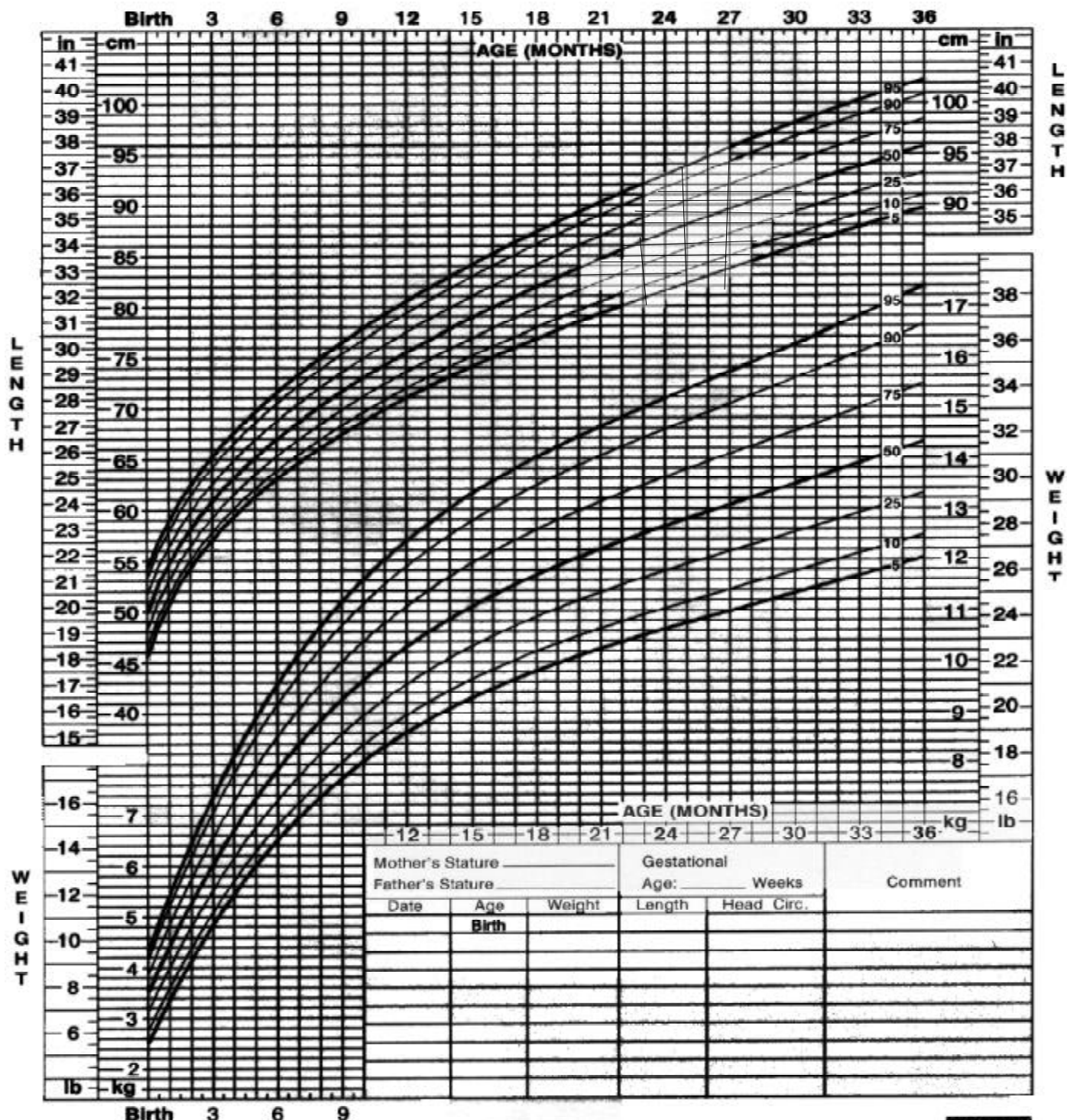
## Infant/Toddler Growth and Development Overview for Child Care Providers

Optimal Periods of Development							
Prenatal	Birth	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years
motor development							
	emotional control						
	vision development						
	social attachment						
	vocabulary						
	second language						
		math / logic					
			music				

# CDC Growth Chart for Boys

Birth to 36 months: Boys

Length-for-age and Weight-for-age percentiles



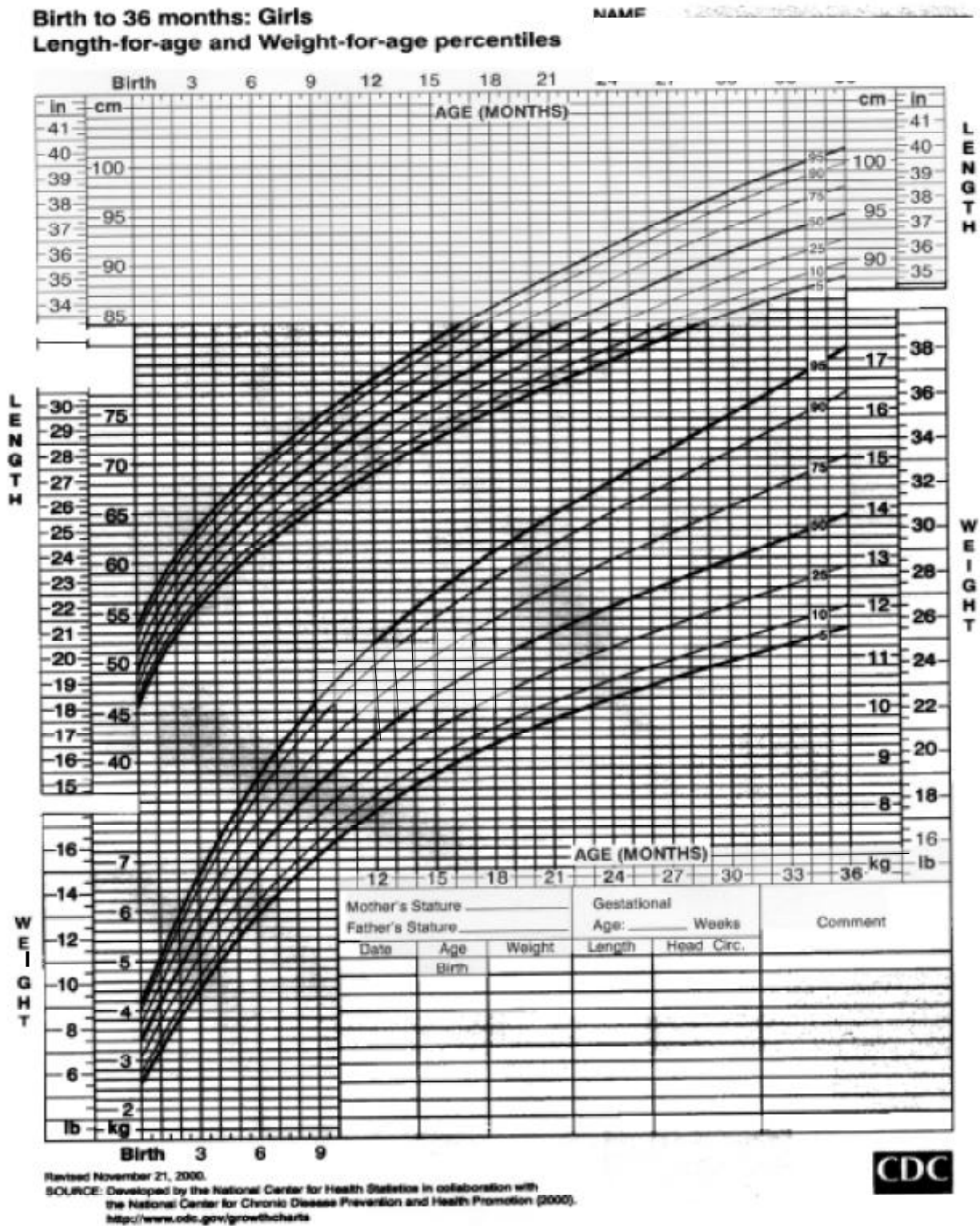
Revised November 21, 2000.

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).  
<http://www.cdc.gov/growthcharts>



CDC Growth Chart for Boys - This Chart is from November 2000- You can print most current Chart at [www.cdc.gov/growthcharts](http://www.cdc.gov/growthcharts)

# CDC Growth Chart for Girls



CDC Growth Chart for Girls - This Chart is from November 2000- You can print most current Chart at [www.cdc.gov/growthcharts](http://www.cdc.gov/growthcharts)

# A Nurturing Environment for the Infant Child Care Facility

Rochelle Bunnett, M.Ed., a former teacher and now a design consultant (see also Our Kids Press in Resources and References section), offers the following examples and ideas for nurturing indoor environments.

1. A well-designed environment for infants must be flexible and responsive to the varying needs, interests, and passions of the people in the space. Reexamine what you have been told about room arrangements and experiment with a variety of different floor plans, first on paper, before committing to a plan. Here are some examples:
  - Provide a variety of seating arrangements from benches to stools to chairs of different heights.
  - Put wheels (locking) on all the furniture so they can be moved around easily.
  - Adapt water and sand tables with different types of lids (i.e., peak-a-boo, clear Plexiglas) and use the tables for both sensory play and mealtimes.
2. If you ask many teachers what they want more of in their environment they will say more space. Most programs meet only the minimum requirements for square footage and can feel crowded with too much furniture. Fixed features, such as doors, windows, and electrical outlets, play a major role in the room's design. Before buying any additional materials or furniture, encourage programs to take a complete inventory of what they have. They also might explore attractive and functional ways to store, display, and present the materials they have. For example:
  - Add storage shelves under water/sand tables.
  - Install rain gutters on the walls to display books and puzzles.
  - Add interactive plan panels such as peek-a-boo.
3. Young children often need more than one "cozy nest." Programs have used mattresses, pillows, and other materials to create soft and quiet places that still are in visual range of caregivers.
4. Flexible lighting is especially important in infant settings. Instead of having banks of fluorescent lights on, some programs have specific areas "spotlighted" or warmed by lamps (table, floor, and clip-on). The amount of lighting might be able to be adjusted by turning on sections of overhead lights or installing dimmer switches to change the brightness.
5. Some toddlers need more time to play and complete projects, so programs can reconsider the need to have everything "cleaned up" during clean up time. In some centers, the block area looks more like a construction site in progress with unfinished projects preserved by signs stating "Construction in Process."
6. Sleeping environments.

Providing nurturing environments is more complex than following a list of guidelines or a master design for infant/toddler rooms. Program staff need to explore their own beliefs and value systems, draw from their childhood memories, and do some research. The following references are a place to start:

Greenman, Jim. *Caring Spaces, Learning Places: Children's Environments That Work*. Redmond, WA: Exchange Press Inc., 1988.

Greenman, Jim. "Infants Get Out: Outdoor Settings for Infant Toddler Play," *Child Care Exchange*, May/June 1991.

Szanton, Eleanor. *Creating Child-Centered Programs for Infants and Toddlers*. Washington, D.C.: Children's Resources International, Inc., 1997.

NAEYC *Young Children* articles:

May 1998 – "Simply Sensational Spaces: A Multi-Approach to Toddler Environments," Linda Howard & Linda Ruhmann.

March 1997 – "Toddlers at Play: Environments at Work," Carol Zeavin.

May 1996 – "Lighting Alternatives: Considerations for Child Care Centers," Mary Ellis Schreiber.

## PLAYGROUND MAINTENANCE CHECKLIST

### General Up-Keep

- ☐ Area is free of miscellaneous debris, litter, or animal excrement.
- ☐ Trash or garbage is not accessible to children.
- ☐ Equipment is not broken or missing pieces.

### Surfacing

- ☐ Equipment has 9" - 12" of protective surfacing under and around it and surfacing materials have not deteriorated.
- ☐ Foreign objects or debris are removed from loose surfacing materials.
- ☐ Loose surfacing materials have not compacted or reduced in depth, with special attention to heavy use areas such as those under swings and slide exit regions.
- ☐ Surfacing extends at least 6 feet from the base of the equipment in all directions.



### General Hazards

- ☐ There are no sharp points, corners, and edges. For example, check the sides and sliding surface of slide chutes for sharp or rough edges caused by deterioration.
- ☐ There are no protrusions and projections, like nuts, bolts, or bar ends.
- ☐ There are no missing or damaged protective caps or plugs.
- ☐ There are no potential clothing entanglement hazards such as open S-hooks or gaps at the top of slides.
- ☐ There are no pinch, crush, and shearing points or exposed moving parts.
- ☐ Check for trip hazards, such as exposed footings on anchoring devices and rocks, roots, or any other environmental obstacles in the play area.



### Deterioration of Equipment

- ☐ Equipment and other playground features have no rust, rot, cracks, or splinters, with special attention to possible corrosion where structures come in contact with the ground.
- ☐ Equipment is securely anchored.

### Security of Hardware

- ☐ There are no loose or worn connecting, covering, or fastening hardware devices. For example, S-hooks at both ends of suspending elements of swings and all connection points on flexible climbing devices for wear.
- ☐ Moving parts such as swing bearing hangers are not worn.



### Equipment Use Zones

- ☐ Equipment use zones are free of obstacles.

### Drainage Systems

- ☐ The entire play area has no drainage problems, with special attention to heavy use areas, such as those under swings and slide exit regions.

# Creating Safe Outdoor Environments for Infants and Toddlers

by Mischa Trusty, Environmental Health Specialist, Snohomish County Health District

## Background Information

Outdoor playground activities provide children with time for gross motor development and a wide variety of sensory, social, and imaginative play opportunities. Children develop their balance and coordination. Outdoor time for all children, including infants and toddlers, is important. It benefits a child's mood, energy level, and sleep. Fresh air is healthy, and the outdoors allows children the opportunity to experience nature.

Unfortunately there are no specific design criteria for playgrounds used by children under 2 years old. For this reason, play areas for infants and young toddlers pose a particular challenge. It is crucial to remember that nothing can replace the need for continuous supervision. When a center cares for a wide age range of children, it is best to have separate play areas for younger and older children. If separate areas are not possible, then a distinct separation between equipment for younger children and that for older children would suffice.

## Overall Safety

A playground should be free of sharp edges, protrusions (especially those at a child's eye level), and broken equipment. Playground equipment should not be able to pinch or crush a child's fingers. Footings securing equipment to the ground should not be exposed as this can create a tripping hazard or cause serious injury if a child should fall onto it. The fence around a play area should be well-maintained and not easily climbable. The grounds should be free of debris, glass, standing water, or other foreign objects and should be checked for these things daily. Make sure that plants are not poisonous and that dirt doesn't contain toxic substances such as lead or arsenic. Make the natural environment a fun and safe place for children to explore.

The summer sun in many areas can be very hot. A shaded area is necessary to protect young children from overheating. A picnic table in a shaded area would provide a good area for quiet play. Young infants should be kept out of the direct sunlight. Sunscreen should be applied to children over 6 months old. Visors, hats, and sunglasses are useful in protecting children from the sun's damaging rays. In warmer months, it is also important to have drinking water available outside.

## Surfacing

According to the Consumer Product Safety Commission, nearly 70% of all playground injuries are caused by falls to the surface. For this reason, having appropriate, well-maintained surface material beneath any climbing equipment is important. This includes slides, swings, and other gross motor equipment. Appropriate surfacing may consist of loose-fill material such as woodchips or pea gravel at a depth of 9 to 12 inches. Be wary that young children may put pea gravel in their nose or ears. An alternative option to loose-fill material would be a unitary mat which meets ASTM standards for fall protection; these mats are often made of rubber. Concrete, asphalt, dirt, and grass are not adequate to protect against serious head and neck injuries. Fall protection surfacing needs to extend a minimum of six feet in all directions around a piece of equipment. More than six feet is needed for swings and slides. Loose fill surfacing material should be raked often to help minimize compaction.

## Age-Appropriate Equipment

A play area should be designed with the age of the child in mind. Equipment that is appropriate for a five year old is most likely not suitable for an 18 month old child.

## Creating Safe Outdoor Environments for Infants and Toddlers, continued

protected from foreign debris. Bucket or surround swings for infants and toddlers provide back support.

For older infants and young toddlers, a crawling tunnel can provide an opportunity for exploration. Avoid sharp or rough edges and ensure adequate supervision and adult accessibility in case of emergencies. A low climbing platform is another option. In general, for this age group, stationary equipment is better than equipment with moving parts.

Loose play parts are excellent choices for infants and toddlers. Push toys, wagons, or other pull toys, and balls can be brought outside for playtime. Make sure any cords on the pull toys are short enough to prevent accidental strangling, usually about 6 inches.

For older toddlers, any playground equipment should have a maximum height of 24 inches. A recommended size for the deck space on a climber is 4 ft. x 4 ft. Any climbing equipment needs to offer an easy way out as toddlers can climb better than they can descend. Low ramps work well for this age group. Handrails on such equipment should be approximately 22 to 26 inches high, rather than the 38 inch handrail height typically used for school-age children's equipment. If a surface is elevated more than 20 inches a guardrail or protective barrier at least 29" high should be installed. Barriers should be free from entrapment hazards (see below). A steering wheel placed on the structure provides a fun activity for toddlers, or consider placing two next to each other for parallel play.

Toddlers may enjoy using a playhouse for creative or social play. It is advisable to choose an open design or take off the shutters to allow for good supervision from all sides.

Durable ride-on toys that have a wide base can be used by some toddlers. Toddler helmets can be purchased and made available. At this young age, the helmet serves a dual purpose. Not only does it protect the head from injury, but it also teaches a practice that will hopefully stay with the children as they get older. It is vital that helmets not be worn when playing on other equipment due to the risk of entanglement.

The Consumer Product Safety Commission recommends that the following types of playground equipment not be used for children under age 5: chain or cable walks, free standing arch climbers, fulcrum, seesaws, log rolls, long spiral slides, overhead rings, parallel bars, swinging gates, track rides, and vertical sliding poles. Caution and strict supervision should be used for swings, merry-go-rounds, and other moving equipment.

### Entrapments and Entanglements

Entrapment and entanglement hazards on a playground can have deadly consequences. An entrapment is any space measuring more than 3.5 inches and less than 9 inches. In such an opening, a child can get their body through, but not their head. They become trapped and can strangle.

Protruding bolts and gaps where parts of equipment are joined together can catch clothing or drawstrings leading to strangulation. Providers should check children's clothing for drawstrings before allowing them on play equipment. S-hooks on swings should be closed shut (so a dime will not fit in the opening).

### Role of the Health Consultant

It takes a trained eye to evaluate the safety of an outdoor play area. A health consultant should become familiar with the major hazards that can be found on playgrounds. A good resource is the Consumer Product Safety Commission's "Handbook for Public Playground Safety."

Playground hazards can be assessed during a consultation visit and discussed with the director and staff. In reviewing playgrounds, a checklist is helpful. A basic checklist has been included in the appendix of this manual. A copy of the checklist and other playground safety information can be provided to the child care. The center can be encouraged to

---

## Creating Safe Outdoor Environments for Infants and Toddlers, continued

---

evaluate their own playground on a regular basis.

The nurse consultant can also advise the child care center on age-appropriate outdoor activities. Explaining the developmental stages of the children and the benefits of different types of play opportunities can be helpful to centers wishing to modify or enhance their outdoor play areas.

### **References and Resources to Keep Current**

American Public Health Association and American Academy of Pediatrics. *Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs*. Chapter 5.3, 1992.

Christiansen, Monty L., ed. *Points About Playgrounds: A Compilation of Significant Information*, second edition. Arlington VA: National Recreation and Park Association, 1995.

Miller, Karen. *Caring for the Little Ones: More Fun Outside*. *Child Care Information Exchange*, p. 20-23. July 1999.

U.S. Consumer Product Safety Commission. *Handbook for Public Playground Safety*. Washington D.C., 1998.  
<[www.cpsc.gov](http://www.cpsc.gov)>

Wortham, Sue and Marshal R. Wortham. "Nurturing Infant and Toddler Play Outside: Three Cells of Possibility," *Dimensions of Early Childhood*, p. 25-26, Summer 1992.

